



## KODAK PHOTO NOTES

Formerly Kodak Handbook-Notebook News

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### Flowers and Folks in Springtime Pictures

SPRING is really the beginning of a photographic New Year. Like bears and other hibernating fauna, many photographers are not enchanted by flora with snow on it. They spurn the frostbitten landscape for cozier, indoor subjects. With the arrival of Spring, however, we all get that vernal urge to be up and about, to enjoy the newness of the season. And we start thinking about the pictures we will take.

#### TRY PHOTOGRAPHING FLOWERS

You don't have to own the soul of a poet to enjoy Spring flowers. And you don't need complicated or expensive equipment to capture on film the delicate tones, fragile texture, and other details which are fully appreciated only when the blossoms are viewed at close range.

Almost any camera, including the box variety, can be adapted for taking bee's-eye views. Slip a Kodak Portra Lens over the regular camera lens and move in close to the flower of your fancy. Directions are included with each Portra Lens. They must be followed closely, and subject distances must be measured accurately. Easy-to-use graphs and formulas for use with Kodak Portra Lenses are included in the Kodak Data Book, "Kodak Lenses, Shutters, and Portra Lenses," and in the latest Lenses section of the Kodak Reference Handbook. Also included in these books are directions for making a simple and positive finder, called a focal frame, which makes the use of Kodak Portra Lenses practically foolproof.

Morning is a good time for flower pictures. The blossoms are fresh, and the angle of the sun aids modeling and reveals texture. Avoid extremes in lighting angles, though, until you've gained some experience. Have a reflector handy in case it is needed to lighten shadows. A

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### **Flowers and Folks —** (Continued from page 1)

white card or one covered with crinkled tin foil is recommended. Don't use the reflector to eliminate shadows completely, as this destroys modeling. Use a large card, desk blotter, or solid-colored blanket as a background; place it far enough behind the flowers to be out of the plane of sharp focus. You can also use deep shadow for a background. Concentrate at first on individual blossoms, using a Kodak Portra Lens 3+, or a combination of the 3+ with 1+ or 2+, then try your hand at arranging and photographing small groups of blossoms.

For close-up, still photographs, guard against motion of the blossoms during exposure. This rules out flower photography outdoors on windy days. Since small lens openings and slow shutter speeds are needed to obtain both adequate depth of field and proper exposure, many photographers use a length of  $\frac{1}{8}$ - or  $\frac{1}{4}$ -inch metal rod or doweling which can be stuck into the ground and to which the flower stems can be fastened with thread. This is an effective way of holding the blossoms still for the exposure.

When using an extended camera bellows for close-ups, make allowance for the change in the effective *f*-number of the lens. The Effective Aperture Kodaguide is valuable for determining the effective *f*-number and for making exposure allowances.

**Exposure:** Naturally, you will want to use color film for your flower pictures. When the flowers are in bright sunlight, a typical exposure for Kodachrome Film, Daylight Type, with a Portra Lens will be 1/10 second at *f*/16 or 1/25 second at between *f*/8 and *f*/11. When Kodacolor Film is used in one of the simpler cameras, instantaneous exposures can be made in bright sunlight only. With a camera having lens and shutter adjustments, the Kodacolor Film exposures should be about 1/50 second at *f*/11 or 1/25 second at *f*/16.

### **A TIP ON SHOOTING OUTDOOR GROUPS IN COLOR**

GRADUATION exercises and weddings are almost certain to be occasions for taking photographs of groups outdoors. Careful attention to posing and exposing still color shots of such groups paves the way for fine Kodachrome or Kodacolor Prints which each member of the group will be pleased to own.

When "covering" these and similar events, make sure that Brother Ted or Sister Kate is not located in the shade while the rest of the group is in bright sunlight. If you expose for the sunlit portions of the scene, the people in the shade will be rendered too dark to show up well in a color print.

# Focal Length vs. Angle of View

SOME photographers seem to think it strange that a 100mm wide-angle lens does not include a wider angle of view on a  $2\frac{1}{4} \times 3\frac{1}{4}$ -inch negative than a normal 100mm lens. They ask, for example: "If the regular 100mm lens on my  $2\frac{1}{4} \times 3\frac{1}{4}$ -inch camera covers a field measuring  $5\frac{1}{8} \times 8$  feet at a subject distance of ten feet, why can't I put a 100mm wide-angle lens on the camera and take in an even greater area at the same subject distance?" To answer this and similar questions, let's first look at some fundamental facts about lens focal length and covering power.

## FOCAL LENGTH

FIRST, what does the focal length of a lens tell about its performance? It is necessary to think of focal length as a property of a lens, rather than as a distance, even though focal length is measured in millimeters or inches. This property determines how big an image the lens will form of an object at a given distance from it. For example, if a man six feet tall stands 25 feet away from a one-inch lens, the lens forms an image of him about  $\frac{1}{4}$  of an inch high. A 2-inch lens forms an image twice as high, a 6-inch lens, six times as high, and so on. (Fig. 1)

It is important to stress that it is the focal length and not the type of lens that determines how large an image is formed by the lens.

It is shown in Fig. 2 that a 6-inch telephoto lens for 16mm motion pictures gives an image the same size as a 6-inch wide-angle lens used on an 8 x 10-inch view camera when the

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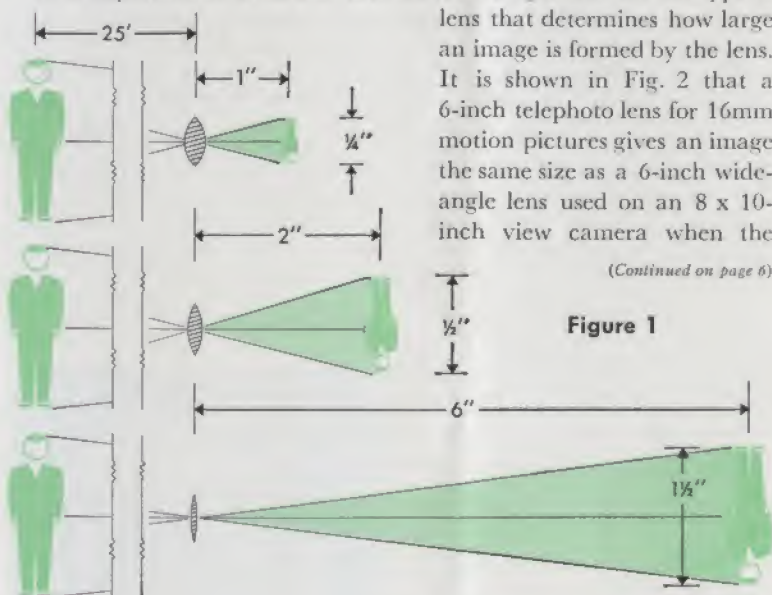


Figure 1



## WHAT'S NEW?



a glimpse of some  
recent Kodak products  
for better photography

### Kodak Duaflex Camera With Kodar f/8 Lens Has Double-Exposure Prevention, and Low Price

You don't ordinarily expect to find such advanced features as double-exposure prevention and a three-element, focusing, f/8 lens on a camera that sells for less than \$20. But the new Kodak Duaflex Camera with Kodar f/8 Lens *does* have these features, and its price is only \$19.85, tax included.

Although this low-priced camera offers the picture-saving advantage of double-exposure prevention, intentional double exposures for special effects can be made by means of a reset lever.

The Kodar f/8 Lens has a focal length of 72 mm, and is adjustable to f/8, f/11, and f/16. Subjects as close as 3½ feet can be focused on sharply. With the focusing scale set at 15 feet (this distance is marked in red for quick reference), and the lens opening set at f/11, everything in the picture from 9 feet to 48 feet is in focus.

#### OTHER FEATURES

*Built-in flash synchronization* permits trouble-free flash snapshots with the Kodak Duaflex Flashholder, available as an accessory . . . *Brilliant reflex finder* makes it easy to compose the picture just the way you want it . . . *Twelve*

*negatives*, 2¼ inches square, on Kodak No. 620 black-and-white film, or 9 exposures on Kodacolor Film . . . *Duaflex Shield*, supplied with the camera, protects picture-taking and viewing lenses when camera is not in use . . . *Adjustable neck strap* is also provided with the camera.

With the accessory Kodak Close-Up Attachment 6A over the regular camera lens, sharp pictures of subjects as close as 23 inches can be made. The various Kodak Combination Lens Attachment accessories can be fitted to the camera by means of a 1½-inch Series V Kodak Adapter Ring.

The smartly styled Kodak Duaflex Camera with Kodar f/8 Lens makes an appropriate, lasting gift for birthday, graduation, or almost any occasion. It is simple to use, and yields black-and-white or Kodacolor pictures of exceptionally fine quality. If your Kodak dealer does not yet have his supply, he soon will.



## KODAK MICRODOL DEVELOPER AND REPLENISHER NOW SUPPLIED IN HANDY, LIQUID FORM



INTRODUCTION of the new Kodak Microdol Liquid Developer and Kodak Microdol Liquid Replenisher means greater freedom from dark-room chores. It's the same Kodak Microdol Developer that thousands of photographers are using for fine-grain negative processing, but in this new, liquid form it is ready to use—no mixing or diluting is required. Kodak Microdol Liquid Developer is available in quarts only, the replenisher in 16-ounce bottles.

Prices: Kodak Microdol Liquid Developer, one quart bottle, \$1.00; Kodak Microdol Liquid Replenisher, 16-ounce bottle, 75 cents.

## Would You Like To Take Pictures of Birds? Here's A Free Booklet That Tells How

If you have a yen to photograph a wren, or any other feathered friend, write to Kodak's Sales Service Division for a free copy of the booklet, "How to Take Bird Pictures with Still and Movie Cameras" (C29).

Whether your camera and other equipment are relatively simple or elaborate, this 16-page booklet tells you how to use it for getting good bird pictures. That comparatively few persons try bird photography is due not so much to difficulty in finding or approaching birds to photograph, as to the fact that ordinary picture-taking techniques at first glance seem inadequate and that specialized methods sound pretty formidable without a better-than-average knowledge of photography and photographic equipment. This booklet therefore tells little about birds and their habits, but a great deal about photographing them.

The still-camera section describes in considerable detail the necessary equipment, how to set it up, and what exposures to use. The movie section is equally thorough. There are many illustrations, both in color and in black-and-white, which show not only what to do, but the results that are possible. A bibliography is provided for those who wish to go further with the subject.

### **Focal Length vs. Angle of View** — (Continued from page 3)

object is at the same distance from the two lenses. All lenses of the same focal length form images of the same size, whether they are called telephoto lenses, wide-angle lenses, or by any other name.

### **ANGLE OF VIEW**

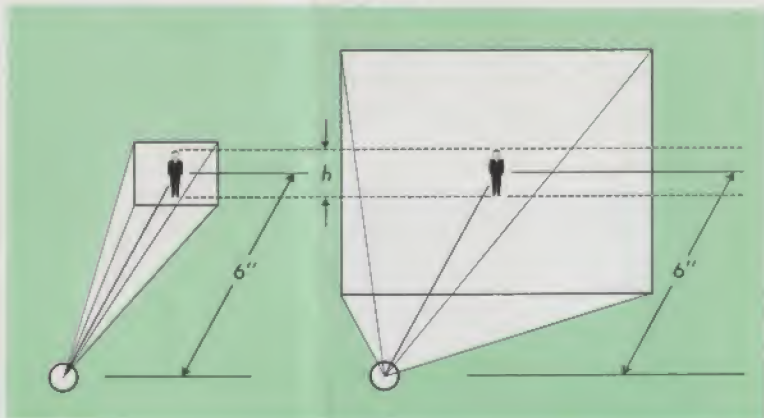
FIGURE 2 shows another factor of importance in addition to the focal length. It will be seen that, although the size of the image is the same for each lens, one lens can include much more of the scene than the other. The extent of the scene imaged by the lens is called its covering power and for convenience is often described in terms of the angle of view. The angle of view actually obtained in a photograph cannot be greater than this angle, but it can be less, depending on the size of the film used.

The angle of view does not depend on the focal length of the lens, and a lens of a given design may be made in a series of focal lengths so that we get the same included scene even though the scale of the picture is different. In order to keep the same included scene, each increase in focal length requires a proportional increase in negative size to accommodate the larger image.

When lenses are designed for definite applications, the designer takes into account the angle of view (field) to be covered.

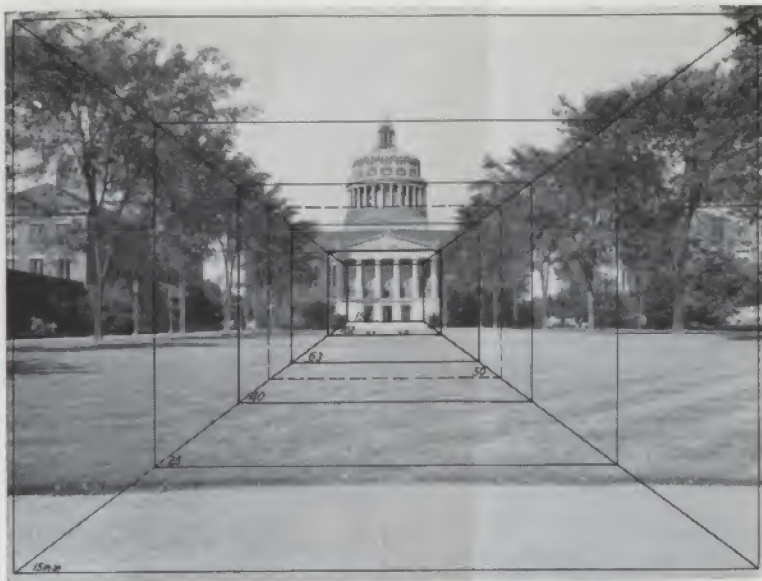
For example, there are 100mm lenses on the market for several purposes. A 100mm lens for 16mm motion pictures is required to make a picture with a diagonal of only one-half inch, and hence its angular covering power is small, only about  $3\frac{1}{2}^{\circ}$ . The ordinary 100mm still-

**Figure 2**





## FIELD SIZES WITH KODAK CINE EKTAR LENSES



The above illustration will serve to clear up a question that has puzzled some movie makers: Why does the new series of Kodak Cine Ektar Lenses omit the 50mm focal length and include in its place a 40mm lens? The rectangles drawn with solid lines in the illustration represent the fields of view of the various Kodak Cine Ektar Lenses. Starting with the widest field, the rectangles show the effects obtained with the 15mm, 25mm, 40mm, 63mm, 102mm, and 152mm Kodak

Cine Ektar Lenses, respectively. The dotted line describes the area which would be covered by a 50mm lens. The Kodak Cine Ektar Lens series gives progressive magnification in steps with a common factor of about 1.5, thus making it easier for the users to switch from one lens to another with the knowledge that he is dealing with a common magnification ratio. Imagine this picture without the rectangle marked "40," and you will see how this even progression is upset.

picture camera lens covers a  $2\frac{1}{4} \times 3\frac{1}{4}$ -inch film size, and to do this must be designed to cover a picture with a diagonal of nearly 4 inches. The angular covering power of this lens must be about  $54^\circ$ , and the area covered is over 60 times greater than that of the motion-picture lens. Again, a 100mm wide-field lens can be used to make a picture  $4 \times 5$  inches in size, with a diagonal of nearly 6 inches and an angular covering power of nearly  $80^\circ$ , which includes three times the area covered by the ordinary camera lens. In spite of this great variation in field, it must be remembered that the size of the image of objects at equal distances from these three lenses will be identical on the film. It is merely a question of how much is to be included in the picture.

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### **Focal Length vs. Angle of View**— (continued from page 7)

And so it will be seen that there are three separate items to be considered. First, the size of the image on the film is determined by the focal length of the lens and is independent of its covering power. Secondly, the covering power or angle of view (and therefore the maximum film size which can be used) depends upon the design of the lens, and not upon its focal length. Thus, in order to obtain wide-angle effects with a wide-angle lens, the negative size must be greater than it would be if a conventionally designed lens of the same focal length were used. For a fixed negative size, a suitably designed lens of shorter focal length must be used to obtain a wider angle of view.

### **ARTICLES ON SPECIAL PHOTOGRAPHIC SUBJECTS**

This list of free articles supplements the list which is included in the *Kodak Reference Handbook* and in the *Kodak Photographic Notebook*. Back issues of *Kodak Handbook-Notebook News* also contain the complete list. These articles will be sent on written request. You are invited to ask for those articles in which you are particularly interested.

#### **New Articles:**

C29—HOW TO TAKE PICTURES OF BIRDS WITH STILL AND MOVIE CAMERAS (16 pages)

#### **Articles announced since Spring, 1948**

K 8—NOTES ON BUILDING AN ENLARGER (8 pages)

D26—EDITING YOUR HOME MOVIES (8 pages)

H20—KODAK CHEMICAL PROCESSING AIDS. Includes Kodak Anti-Calcium, Kodak Anti-Fog No. 1, Kodak Anti-Fog No. 2, Kodak Anti-Foam, Kodak Testing Outfit, Kodak Print Flattening Solution, Kodak Desensitizer, Kodak Photo-Flo (8 pages).

Back issues of *Kodak Handbook-Notebook News* and *Kodak Photo Notes* are available.

### **IS YOUR KODAK REFERENCE HANDBOOK UP TO DATE?**

The most recently published *Kodak Reference Handbooks* include the following editions of the various sections: *Lenses*—Third Edition, 1948; *Films*—Fourth Edition, 1947; *Filters*—Copyright 1944 (no edition designation); *Color Films*—Fourth Edition, 1948; *Papers*—Fourth Edition, 1947; *Processing and Formulas*—Fourth Edition, 1947; *Copying*—Fourth Edition, 1947. Printing dates later than those listed above do not indicate a major revision, unless specifically noted. You can bring your *Handbook* up to date by replacing outdated sections with the latest editions of Kodak Data Books on sale at Kodak dealers.

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